

e¹. Rather slender bodied; outer edge of upper valves of ovipositor with a single or no denticulation at the base of the scoop; hind tibiae normally glaucous but sometimes red *minor*.

e². Rather stout bodied; outer edge of upper valves of ovipositor crenulato-denticulate on the basal half of the scoop; hind tibiae coral red. *collinus*.

b². Lower valves of ovipositor straight, with feeblest signs of a median tooth; interspace between mesosternal lobes strongly transverse; prosternal spine short, not nearly reaching the level of the mesosternum . . . *punctulatus*.

Two of our species, *M. extremus* and *M. fasciatus*, are distinctly and strikingly dimorphic, occasionally occurring with tegmina surpassing the hind femora. These long-winged forms are known in New England only in

M. extremus, and seem to be confined almost or quite exclusively to very high elevations. The long-winged form of *M. fasciatus* has been seen by me only from Michigan, but should be looked for in northern New England.

ON COLEOPTERA FOUND WITH ANTS. THIRD PAPER.

BY H. F. WICKHAM, IOWA CITY, IOWA.

To the earlier contributions of mine on this subject, published in some of the preceding numbers of *Psyche*, I wish to add the following observations, made at Iowa City during the years 1894 and 1895. A number of the records are new, both as regards host and locality, while a few are inserted simply as information touching upon dates or as furnishing additional proof regarding the true status of certain species. I have adopted the plan of taking up each species of ant separately and enumerating its guests; as in this way it would seem easier for the reader to form an idea of what is likely to be found in a given nest. For identification of all the hosts I am under obligations to Mr.

Theo. Pergande, while most of the Pselaphidae and Staphylinidae were named by Captain Casey, who, as we all know, has for years made careful studies among them. Several undescribed Aleocharini and some Scydmaenidae are also in my collections from ants' nests, but these are not included in the present paper.

1. *Formica subsericea* Say. A strong colony of this species, having its nest in a little rocky mound, was examined on April 14 and the following beetles obtained: *Ptomaphagus parasitus* Lec., eight specimens, chiefly at a distance of several inches from the surface. They are lively little fellows and run about actively in their efforts

to escape. Mr. Blanchard writes that these are true *parasitus* and not either of the new species which have been confounded with it in some collections. *Batriscus scabriceps* Lec., one specimen, from near the top of the nest. *Oxytelus suspectus* Casey, one specimen at about the same depth as the *Batriscus*. The exact status of this *Oxytelus* in relation to the ants is rather in doubt—but it seems quite likely that it may find the neighborhood of colonies agreeable in some way, since I get nearly all my specimens from the nests of *Formica subsericea*. The colony above mentioned yielded, in addition to the things already enumerated, three specimens of *Hetaerius brunniipennis* Rand.; these differ from many other myrmecophiles in the habit they have of feigning death at the earliest alarm, but they soon recover and make off at a good rate. They are to be found nearly throughout the nest. Another colony of *F. subsericea*, examined about a month later, furnished a single specimen of *Batriscus scabriceps*.

II. *Formica fusco-gigantes* Forel. Specimens of *Oxytelus suspectus* were taken from a nest of this ant.

III. *Formica obscuripes* Forel. A colony of this species has constructed a large nest in the vicinity, covered by a hillock of rubbish, chiefly small bits of vegetable matter. The first exploration of this nest was made on April 14, 1894, at which time a considerable number of the Staphylinid beetle, *Platymedon laticolle* Casey, were obtained.

It is an active insect and on being exposed by the removal of shelter, immediately burrows again in the loose bits of rubbish of which the ant-hill is composed. No hostility was seen to be manifested towards it by the numerous ants. In the following year another visit was made to the same nest, with the result of finding, on April 26, about twenty-five more of the *Platymedon*, though by May 19 it had become rather scarce—possibly because so many had been taken on the previous visit. The eastward extension of the range of this beetle is of interest, the previous records having come from Arizona, Colorado and Nebraska. The ant with which it lives must be highly desirable company, if we may judge from the number of other guests taken on April 26—two specimens of a small undescribed Aleocharinid, three *Tachyporus*, three *Limulodes paradoxus* Matth., one *Anomala binotata* Gyll. (this deep down in the nest), three *Monotoma fulvipes* Melsh., and two *Anthicus melancholicus* Laf.

IV. *Camponotus pictus* Forel. It is well known that this ant is the host of *Lomechusa cava* Lec., and it seems that the beetle may be found with it through most of the warmer months of the year. I have myself taken it at Iowa City as early as April and as late as September. This past summer I took three in a nest on August 11, and have some records from Mr. A. B. Wolcott showing it to occur in Illinois March 18, and July 9, 12, and 26. It may perhaps be double brooded.

V. *Lasius aphidicola* var. (?) Mr. Pergande expresses a doubt as to the specific identification of this ant. The nest was found in an old log, April 13, and one specimen of *Batrissus foveicornis* Casey occurred as a guest.

VI. *Aphaenogaster fulva* Rog. A

strong colony of this ant was investigated on August 4. The nest was made on the lower surface of a prostrate log, between the bark and the wood. The guests were numerous *Limulodes paradoxus* and four *Thiasophila latipennis* Casey.

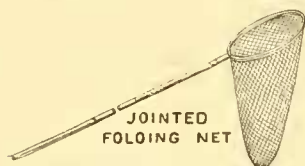
INSECT-VISION.

It has always been assumed that flowers attracted insects, in large measure at least, by the splendor of their inflorescence. Some recent experiments by Plateau, recorded in the Bulletin of the Belgian Academy, throw doubt upon this assumption. In a considerable bed of showy dahlias, Plateau concealed from sight the highly colored rays of some of the flowers exposing only the disk, and in a second series of experiments the disk also but independently, either by means of colored papers or by green leaves secured in place by pins. Butterflies and bees sought these flowers with the same avidity and apparently the same frequency as the fully exposed flowers in the same patch, the bees particularly pushing their way beneath the obstacles to reach them, though not always with suc-

cess. Plateau concludes that they are guided far more by their perception of odors than by their vision of bright and contrasted colors.

In a second communication to the same Academy, Plateau gives the details of another set of experiments to determine whether a wide-meshed net presents any obstacle to the passage of a flying insect which, as far as room was concerned, could easily pass in flight through the interstices. He finds that while such nets do not absolutely prevent passage on the wing, insects almost invariably act before one they wish to pass as if they could not distinguish the aperture, ending by alighting on the mesh and crawling through. He reasons that through the lack of distinct and sharp vision the threads of the net produce the illusion of a continuous surface, as for us the hatchures of an engraving, seen at a distance.

A. SMITH & SONS, 269 PEARL STREET, New York.



JOINTED
FOLDING NET

MANUFACTURERS AND IMPORTERS OF

GOODS FOR ENTOMOLOGISTS,
Klaeger and Carlsbad Insect Pins, Setting
Boards, Folding Nets, Locality and
Special Labels, Forceps, Sheet Cork, Etc.
Other articles are being added, Send for List.

JOHN AKHURST,

TAXIDERMIST AND DEALER IN ENTOMOLOGICAL SUPPLIES.



IMPROVED ENTOMOLOGICAL FORCEPS.

Fine Carlsbader Insect Pins a specialty. Price List sent on application.

78 Ashland Place,

BROOKLYN, N. Y.